Newsletter
July 1996

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- ***The Need for Speed, 68060 style***
- ***PowerPC Amigas?***
- ***Making your own CDROMs***
- ***Programming Java on the Amiga***

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CUGI meetings are no longer held .This, however, may change in the future. Past members will be made aware of any new developments. Correspondence should be addressed to:

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Our home page is at http://www.cugi.ie. You can reach CUGI by Internet mail at cugi@eunet.ie, or individual committee members at the network addresses listed above.

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Newsletter

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Editorial

by Colin Dalton

SINCE Gavin was very busy with work and other commitments, I volunteered to edit this the last newsletter to be published by CUGI, at least in its present form. Unfortunately, it's a bit thin, but I'd like to thank those that did contribute. Not only is it on the thin side, but this issue also breaks all previous records for lateness. It's nice to see that some traditions remain sacred, even now!

It seems that between one thing and another, the individual committee members have been very busy of late, and as usual, there has been no flood of articles from the general membership! That said, we have a good line up this month – the usual news, along with reviews of a monitor and a 68060 board, some Amiga software for a cheap flatbed scanner, as well as a look at what is fast becoming one of the most popular programming languages: Java. Enjoy!

It is with a sense of sadness that I am writing this editorial, for as you all know, CUGI has stopped holding its regular meetings. All interaction now takes place via a mailing list, which you can read about in Kieran's article. Although not "dead", CUGI has lost, what I feel, to be its most important element.

It seems a shame that we have come to this. It doesn't seem that long ago that I went to my first CUGI meeting in May 1991, in a packed St Andrew's College computer room. Back then, it was a case of standing room only if you came late!

For me, the Amiga has always been more than just a machine, but a community of users all willing to share knowledge and help others out. Indeed, it is through CUGI's meetings that I met many friends and contacts that have stood me in good stead in the years since. It is my fervent hope that this sense of community can be continued as CUGI enters this new phase in its existence.

It has also been my privilege to serve on the Committee for the past three years, first as Communications Officer, and then as Treasurer. While it's been hard work – preparing quizes or photocopying newsletters well into the early hours of the morning, preparing demonstrations, attending committee meetings, running a BBS, and all the other things that went with the territory – it has been great fun too, and something I've been glad to do. But alas, over the past few months free time has dwindled away from all of us on the committee, as has the membership, such that in the end, we just weren't getting enough out of it to justify the effort.

On a personal note, I'd like to thank all those members of CUGI who have helped me out in the past. You know who you are, so I won't name names, yet special thanks must go to a certain bearded ex-Chairman – I don't think there's anyone in CUGI who he hasn't done something for at one time or another!

As I write this in December, Viscorp's position regarding ownership of Amiga Technologies has yet to be clarified, but in all honesty I would say that it matters little – it's simply too late now. Hope for the future of the Amiga, or the spirit of community that only "niche" machines seem to provide, now lies with the likes of Phase 5, PIOS, and perhaps even Be. After the disappoinments of the past two years, I won't be holding my breath, but it does at least give us something to hope for.

So that's all folks. After eight years in its present form, it's the end of the newsletter, and 13 years of CUGI meetings have come to an end too, but we look forward to hearing from you on the mailing list. Who knows, maybe this time next year, a whole new generation of machines will have been released by the likes of Phase 5, and we'll all be meeting once a month again.

Whatever the case, I wish you all the best of luck for the future.

csd

Java and the Amiga

by Karl Jeacle

SPRING 1995 saw the launch of Sun Microsystems' new portable programming language, Java. It took some time before multiplatform support became available, and it established itself as a technology which could bring interactivity to the WWW. Over a year later, Java is still a buzzword in the computing magazines, and people are starting to realise that it has potential to do a lot more than just run "crapplets" on web pages.

In this article, I'll briefly discuss what Java is all about, and report on the status of Java on the Amiga, both for application development and for running Java applets and applications. Most importantly, I'll give lots of pointers to information available on the Internet to help you get started working with Java on your Amiga.

Java Overview

There is an incredible amount of hype surrounding Java. Once you wade through all this dross, however, you realise that while Java has great potential, it is really nothing more than a programming language.

There are a number of features which make it stand out from all the other languages out there, but probably the most important aspect of the language is Sun's push to make Java code as portable as possible. The idea is that Java code can be written and compiled on ANY machine (that has a Java compiler) and the resulting "executable" can be run on ANY machine (that has a Java runtime engine).

This is achieved by not compiling Java code into a native binary executable for a particular CPU architecture e.g. Intel x86 or Motorola 680x0, but into a "bytecode" for a "virtual machine". This machine can be thought of as a machine which has a Java CPU instead of an Intel or Motorola processor.

Because the world is not full of machines with Java CPUs, we need a piece of native software on our computers to emulate this imaginary Java CPU. This piece of software is called a Java runtime engine - it emulates a virtual machine running a Java CPU. When Java was launched, there was obviously no such thing as a Java computer, but now Sun are shipping real Java CPUs, so before long, many machines may have Java co-processors on board to handle Java code natively in addition to a conventional CPU for their existing applications.

The upshot of all of this is that, in theory at least, it shouldn't matter what kind of computer you have to run the latest greatest applications... as long as they are written in Java. Application developers should be free to develop code on any platform which can generate Java bytecodes, and this code should in turn run on any machine that has a Java runtime engine.

Getting back to the Amiga, this means that if we want the Amiga to be Java compatible, we need to have the two basic programs mentioned above i.e. the compiler and the runtime engine.

Compilers

At present, the only Java compiler available for the Amiga has come from Fred Fish's ADE (Amiga Development Environment) initiative. It's a port of the Unix program, guavac. The original guavac is part of the Free Software Foundation's GNU project which aims to provide programmers with high quality freely available software development tools.

Being a Unix port, and indeed in the style of most GNU tools, guavac is a purely command line driven program. There is no fancy frontend. You run it from a CLI prompt to tell it what Java files to compile.

Incidentally, if you're wondering what Java is like to program, it's very similar to C++.

If you have already programmed in C++ or have C experience with a knowledge of object-oriented principles, then you should be able to pick up Java quite quickly.

Runtime Engines

Once again, the only runtime engine available at the moment is a Unix port, and it too comes via the ADE. It's called Kaffe and unfortunately is very basic on the Amiga. What a straight port of Kaffe to the Amiga allows is the interpretation of Java bytecodes. This works perfectly well as long as there is little or no I/O from the Java application!

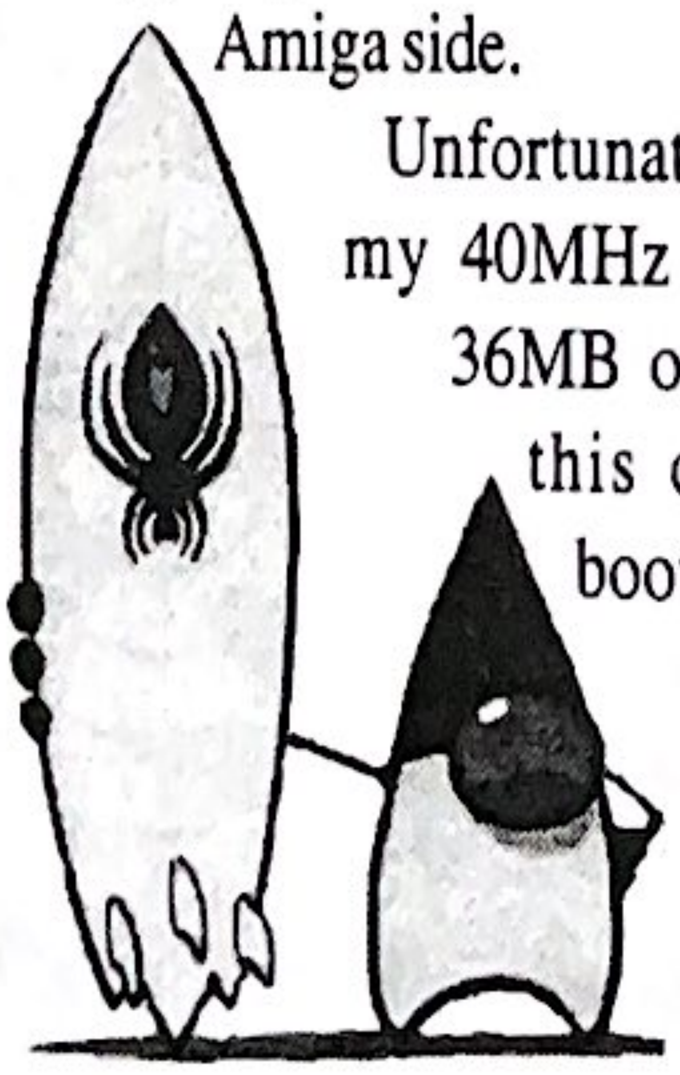
Basically, the Kaffe runtime engine itself has been ported, so a virtual Java CPU is available for Amiga users, but the supporting Java libraries which provide us with graphics, networking, etc are not yet available.

This leaves us in the unfortunate position of being able to happily compile Java applications on the Amiga, but not able to run them! If you're inventive enough though, there is a solution, albeit a rather clumsy one.

The Amiga can emulate a Macintosh. The Mac has two free Java runtime engines available - one from Sun, and one from Apple. An Amiga running ShapeShifter can run both of these, and use them to preview code compiled with guavac on the Amiga.

What you'll need

Here's the bad news: Java is extremely resource hungry. I've been able to develop Java applets using the Guavac compiler and preview them using Sun's JDK via ShapeShifter. Even better, I've been able to have ShapeShifter running at the same time as the Guavac compiler, so all I have to do is flick screens and hit reload on the applet previewer after each compile on the Amiga side.



Duke – the Java mascot

Unfortunately, I've found that my 40MHz 68040 needs about 36MB of FAST RAM to do this comfortably. After booting, my Amiga has used about 8MB; then ShapeShifter has 16MB to itself; which leaves 12MB free for Guavac development work. Of course, it's early days yet, and subsequent releases of all the software concerned will hopefully be smaller and run faster.

Remember that the current version of Guavac is a Unix port and is larger than the average Amiga program (the executable is over 1MB). And having to run ShapeShifter to preview applets is way over the top! When a native Amiga runtime engine appears, it is likely to be much smaller and require far fewer system resources.

Java Information

It's no surprise to discover that the best place to look for more information on Java is on the Internet, so below are some useful URLs which should tell you more about everything discussed in this article.

For updates on what's happening on the Amiga Java front, you might like to check out Niall Teasdale's Amiga Java Page. You can also go directly to the original guavac and Kaffe pages, however, Fred Fish's Ninemoons site is where you'll find the Amiga ports.

Amiga Java Page
`http://www.sss.co.uk/~nt/hotjava.html`

Guavac
`http://http.cs.berkeley.edu/~engberg/guavac/`

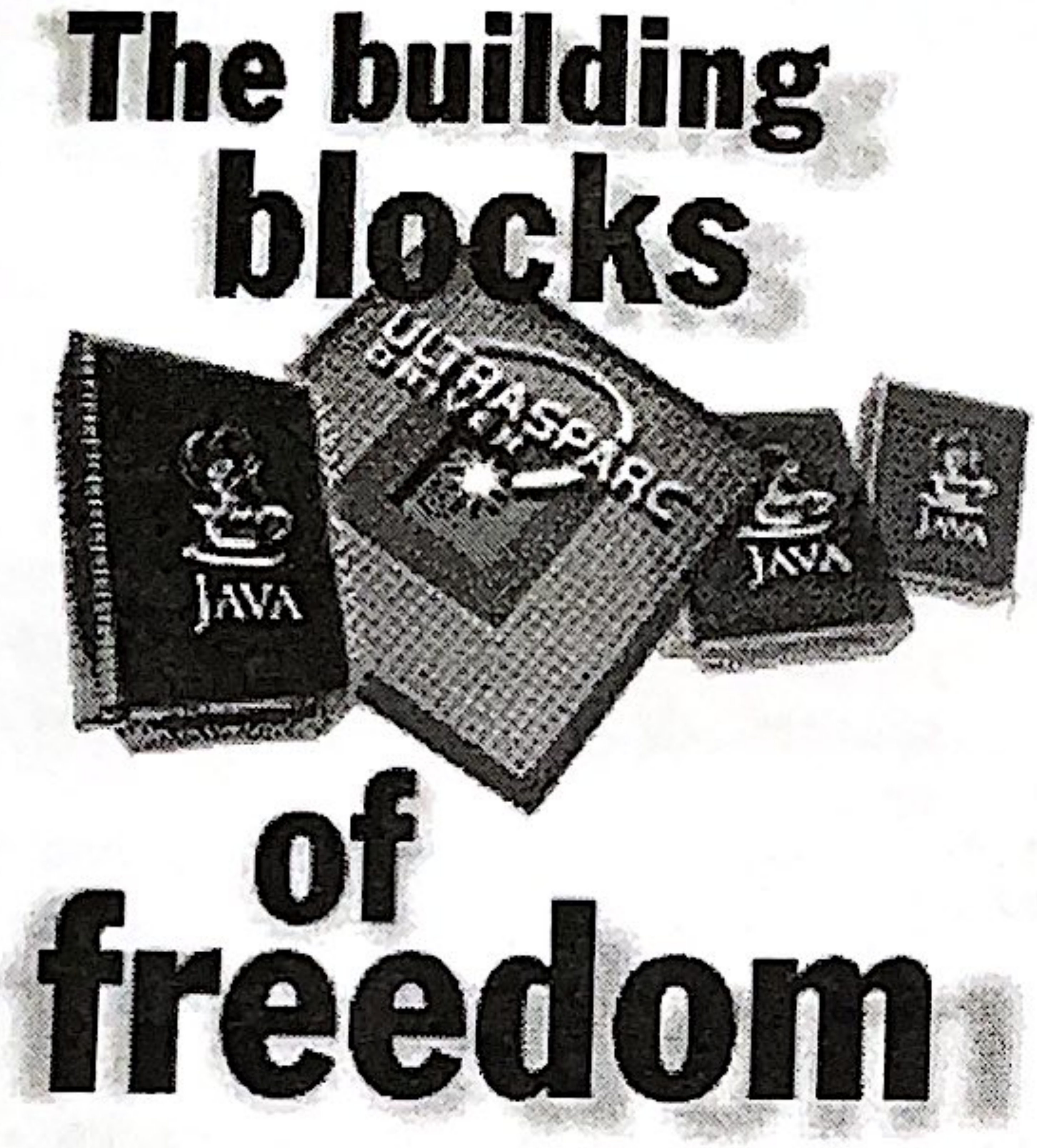
Kaffe
`http://www.tjwassoc.demon.co.uk/kaffe/kaffe.htm`

Ninemoons
`http://www.ninemoons.com/products/ade.html`

Explaining how to get ShapeShifter running on the Amiga would require an article in itself. For the Mac Java programs here you'll need at least a 68030 and System 7.5.x.

ShapeShifter
`http://www.uni-mainz.de/~bauec002/SSMain.html`

Sun Mac Java Development Kit (JDK)


The building blocks of freedom
JAVA
ULTRASPARC
JAVA
JAVA

`ftp://ftp.javasoft.com/pub/JDK-1_0_2-MacOS.sea.hqx`

Mac OS Runtime for Java (MRJ)
http://www.devtools.apple.com/mrj/

For more information on Java in general, check out Sun's own Javasoft site. It's got all the specifications and white papers and latest information on what's hot in the Java world. If you're looking for Java applications, or libraries of code to help you write Java applets, then Gamelan is for you.

Javasoft
`http://www.javasoft.com/`
Gamelan
`http://www.gamelan.com/`

Sunsoft Press has published a number of books on Java, and both "Just Java" and "Core Java" have received good reviews. There are, however, many many books on Java, and most are aimed at programmers. If you want more general information on Java, by all means go to your local bookstore, but you'd be far better off surfing the web for articles, press releases and product reviews. If you're thinking of buying a Java book, an invaluable guide to some of the books available is at:

http://sunsite.unc.edu/javafaq/books.html

There are also a number of Java newsgroups on Usenet. If you already read Usenet news, then by all means, check them out. If you're not a Usenet junky, you may find yourself a little lost in the ongoing discussions.

The Future

It looks as though Java is here to stay for the foreseeable future. Sun want the language to be ubiquitous. Their range of Java chips allow everything from toasters to workstations to support or make use of Java in one form or another. Industry pundits claims that "network-centric" computing with "thin clients" is the future.

In the same way that a set-top box can be relatively dumb and sit on your TV, yet provide you with lots of functionality, they expect many offices to replace today's desktop PCs with scaled-down "thin client" PCs that make greater use of the network and supporting large scale server machines in the background to provide functionality.

If this is the future for hardware, then the future for software must be Castanet from Marimba Inc. In the same way Java hit it big 18 months ago, expect the same thing to happen with Marimba. It's going to be everywhere.

It's too complicated to describe here, suffice to say that it uses Java to deliver on many of the original promises that the Java evangelists have been on about for the last while. Check it out for yourself:

http://www.marimba.com/

From an Amiga point of view, we can only hope that Java support will appear in web

A "thin client" – the PC of the future?

browsers as soon as possible. The viability of an Amiga set-top box (such as VIScorp's ED) would be greatly strengthened by the presence of a robust Amiga Java runtime engine. It is likely that web browsers will be the first Amiga applications to make use of Java, but if Java continues the way its going right now, the advent of native Amiga Java support could breath new life into the machine. The number of applications available to Amiga users could literally double overnight.

Leading software companies such as Corel are releasing Java based versions of their their top applications. Java's portability means reduced development costs for them in maintaining separate PC and Macintosh ports. The advantage to Amiga owners is that this increased ease of portability could lead to many big name applications suddenly running on the Amiga.

This is all going take time. But that version of Adobe Photoshop for the Amiga you were hoping for may be more likely that you thought!

Java is still a buzzword in the computing industry. All the major platforms now have Java ports. Given the current state of affairs in the Amiga world, it's no surprise that an Amiga port isn't quite there yet, but at least a number of initiatives are underway.

For most Amiga owners, it's a case of just waiting patiently and hoping that it won't be long before proper Java support is readily available. For those of you with high-end Amigas, you can start getting your hands dirty by coding some basic applets, and learning what Java is all about.

Despite its recent troubles, it's amazing to think that the Amiga that this article has been written on and which has run the Java programs mentioned above, was bought back in 1992. That's over four years ago - a long time in the computer industry.

If nothing else, the Amiga is a survivor. I'm optimistic that in the not-too-distant future Amiga users will be actively developing and running Java applets and applications natively, no matter what kind of Amiga they own.

Ilyama 8617E Vision Master Monitor

By Ben Lewis

Earlier this year I purchased an Ilyama (formerly Idek) 8617E Vision Master 17" monitor. It replaced an aging IBM 16" which, while it had served me well, was unable to cope with the requirements of a new graphics card. (The idea of buying the grahics card was to get better performance out of the monitor; this didn't quite work out!)

The viewable area of the screen is about 15.5 inches measured diagonally - the 17" tag is a bit of a swiz, but then they all do that. It has a 0.26mm dot pitch, which yields a very clear picture. It supports frequencies of 27-86 kHz horizontally, and 50-160 Hz vertically. This means that it should be possible to get resolutions of up to 1280x1024 with a non-interlaced, flicker-free picture (this may depend on the performance of the graphics card controlling the display). It will actually yield a resolution of 1600x1200 at 68 Hz, although this is probably too small for regular use. I have it running happily in 1152x900 or so at 75 Hz - this could probably be higher if I tried. There are six built in preset modes, with 19 user-definable modes.

The monitor has no knobs or dials to set screen size, brightness etc.; instead it has three buttons on the front which control the on-screen display. The 'menu' button brings up a nice blue menu showing the current refresh rate it is showing, along with a host of options to customize the display. All the usual ones are there, along with pincushion, trapezoid, parallelogram, colour temperature, raster rotation, moire, etc. It also supports BNC input as well as the standard 15-pin connector, degaussing, and power management, which can be set to reduce power after a certain length of inactivity - this requires a black screen saver on an Amiga.

From an Amiga point of view, this will not run most games or other applications that use the 15 kHz frequency, unless they can be passed through a display enhancer (or "flicker-fixer"). Therefore it is more suited to serious use, or for playing PC games, not that anyone would want to do that (?!). I run it on a Piccolo SD64 board which uses most of its capabilities.

I've been very impressed with this monitor's performance - the picture is excellent, and it is relatively inexpensive compared with some of the other models on the market. Monitors seem to be the only items which have been largely unaffected by falling computer component prices, and therefore don't expect to get a decent 17" screen for much less than £500. If you're in the market for a new monitor, then the Ilyama is well worth considering.

CUGI Online

By Kieran Tully

I'M sure you'll have read elsewhere in this issue that CUGI intends to focus on improving its electronic presence over the coming weeks and months, in lieu of holding actual physical meetings.

The aim of this radical step is to preserve the community spirit and contact network that CUGI provided, and will hopefully continue to provide for the forseeable future. This decision has not been taken lightly, but the current committee (and all who bothered to come to the AGM) collectively feel that this is the best way to keep CUGI alive until such time as Amiga developments justify holding meetings.

As part of this process, a new Irish Amiga Users mailing list has been set up, and I'd encourage you all to contribute to it. You can subscribe by sending an e-mail to `majordomo@eunet.ie` with the following line in the message body:

```
subscribe ie-amiga-users
  joebloggs@somewhere.ie
```

replacing Joe's e-mail address with your own. To unsubscribe send the following command:

```
unsubscribe ie-amiga-users
  joebloggs@somewhere.ie
```

Already, I'd say that the mailing list has been a resounding success. There's been traffic from Amiga users of all levels of experience, and I'm aware of at least two people who have obtained or sold hardware through the list, including myself. Many of the postings that originate on the list have led on to further private communications; without the list many of these people would never have found out about each other in the first place.

As one of the members of this year's committee, I'll also be working with Karl to update and expand CUGI's Web site. Already, I've removed the links that have been made redundant by the current situation of CUGI, and fixed some minor errors that appeared in translation to HTML.

Current news on CUGI's situation, including a list of items remaining from the auction, is also available from this site.

CUGI's home page will soon be moving to a new host to make it easier for any member of the committee to modify CUGI's Web pages, and also to remove our dependence on the benevolence of outside organisations such as Broadcom, and St Andrews.

This change should go mainly unnoticed by you the user, as the URL will remain the same, but it will allow for more regular updating of the pages, since Karl regrettably has less and less time to devote to CUGI.

I'll also be setting up an unofficial mirror of

Continued on page 12

The Amiga: A

With the future of the Amiga no longer in the hands of one
been so many opportunities, and uncertainties,

phase 5
DIGITAL PRODUCTS

Phase 5 digital products, based in Oberursel near Frankfurt, are internationally operating manufacturers of hardware and software products. The company is entirely owned by its founders, Gerald Carda and Wolf Dietrich. Since the market launch of its first product line in 1992 this company, which consists of an experienced team of the first Amiga users and developers, quickly established itself as one of the leading manufacturers in the Amiga market. Since 1992 its products have been distinguished many times, including 20 awards for Product of the Year in Amiga journals.

The product portfolio for Amiga includes accelerator cards, SCSI controllers and graphics cards. In these fields phase 5 digital products has repeatedly proved itself to be manufacturer that is a forerunner and an innovative leader, for instance in bringing out the first Zorro III-DMA-SCSI controller world-wide, the Fastlane Z3, in producing the first 68030 card world-wide with a DMA-SCSI controller for the Amiga 1200, in offering the first 68060 card world-wide for Amiga systems (the Cyberstorm 060/50 for A4000), in manufacturing the first 64-bit graphics card world-wide with full system-integrated 24-bit support (the CyberVision64 for A3000/A4000) or in bringing out the first 68060 card for the A1200 world-wide, the Blizzard 1260.

pios

The mission of PIOS is to become a reasonable player in the market for consumer computer products. The goal is to reach an overall market share in all countries PIOS goes into of 10 percent until the year 2000. PIOS as a company follows the strategy of developing and marketing PowerPC-based architectures, in strong competition to the Windows/Intel monopoly.

This includes the development and distribution of a native operating system, which will be recognized by the market as the next generation of the former AMIGA OS 3.1. To provide a preemptive multitasking OS with quasi-real-time behavior will be the biggest advantage of PIOS.

PIOS recognizes its position as a start-up-company: small staff, small costs, small overhead. PIOS is heavily dependent on a good working relationship to its customers, vendors, design partners, employees, and shareholders. PIOS wants to become big in competence, sales, market-share, and shareholder-value.

The PIOS Team is headed by President & CEO, Stefan Domeyer, and includes well known Amiga personalities such as John Smith, Andy Finkel, Dave Haynie and Dr Peter Kittel.

bright future?

Commodore-style company, never before has there
about the future. ***Karl Jeacle*** *assesses the players.*

QUALITY
QUICKLY
QUIKPAK

In Spring 1995, Petro Tyschtschenko, president of Amiga Technologies selected Quikpak as OEM manufacturer of the A4000T computer system. Quikpak was also appointed as the new distribution company in North America for Amiga products, replacing the Service Management Group (SMG). QuikPak is committed to providing warranty service for any machine they have assembled and sold.

As a creditor of Amiga Technologies, QuikPak has a vested interest in seeing the future of the Amiga handled properly. To this end, QuikPak has placed an offer in front of the German liquidator for Amiga Technologies, and are awaiting further information regarding this.

QuikPak believes that there is more to the Amiga than a simple set top box. They believe that the A4000 and its successors have a place in the market and that a model along the lines of the A1200 also can play an important role in the future of the Amiga. They further believe that products currently under development at QuikPak can bring the Amiga back to the forefront in innovation. By working closely with developers, other manufacturers, distributors, and dealers it will be possible to make the Amiga a success.

VISCORP
VISUAL INFORMATION SERVICES CORPORATION

The Visual Information Service Corp (VIScorp) was founded in 1990 to take advantage of the technological and marketplace developments now remaking the global communications media industry.

The Company's mission is to be a world leader providing easy-to-use and affordable technologies and services that permit the average television viewer to take advantage of the Internet, World Wide Web (Web), on-line services and interactive television (ITV).

VIScorp currently holds a license to the Amiga OS and chip sets and is developing a family of TV-based products that utilize the Amiga's unique functionalities.

Many of VIScorp's senior management have previously worked for Commodore and have a thorough knowledge of the Amiga.

Their intent to purchase the Amiga comes out of (i) an appreciation of the core technology and its importance to VIScorp's long-term business development and (ii) a belief that the Amiga can—like the Phoenix—rise from the ashes and become a profitable technology for the future.

Smart and Friendly CD-1002

by Eddy Carroll

It seems like only a few years ago that I paid IR£350 for an Apple 2x CD-ROM reader. So, you can imagine my delight when I spotted a 2x CD recorder available at a similar price, during a recent trip to the US.

The product in question is the Smart and Friendly 1002 internal CD Recorder (yes, that really is the name of the company!), and I ordered it via the website of Iler Computing (http://www.iler.com/pages/g1e1g1.htm) for the sum of $580.00 including shipping.

As well as the drive itself, the package contained a 74 minute recordable CD, a software CD containing the software and an Adaptec internal SCSI card, along with some assorted floppies. For an extra $150 or so, you can get the external model which includes a case and a more advanced SCSI card (the one I received didn't have an external connection). Although it's sold by Smart and Friendly, the drive is actually a rebadged version of Sony's 924 recorder, which has a good reputation in the industry.

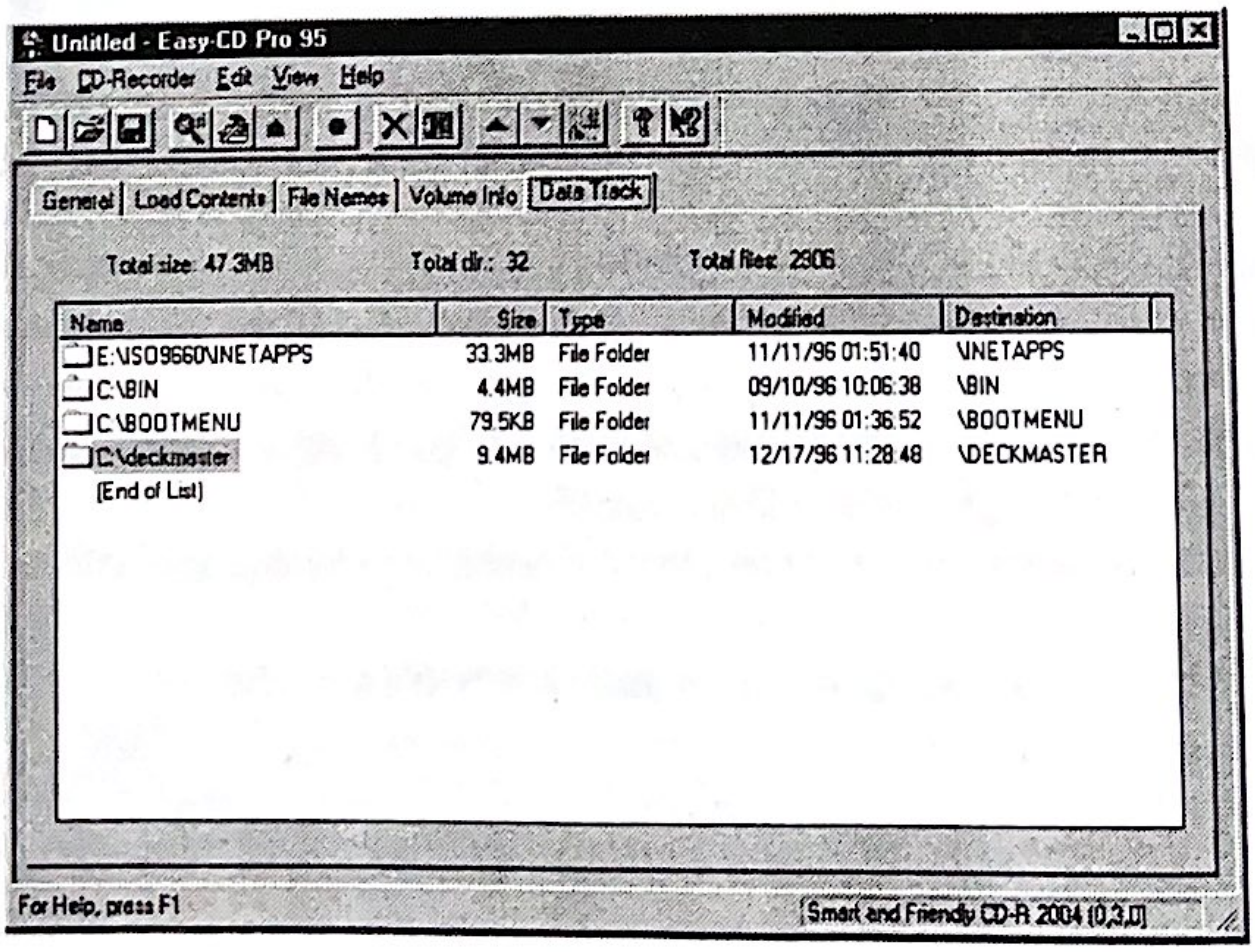
Physically, the drive looks just like a standard internal CD-ROM unit—only the addition of the word "recordable" underneath the "Compact Disc" logo hints that there is more to it than meets the eye. Installing it was simple—just a matter of plugging in the SCSI card, hooking up the data and power cables, then powering up the computer.

Although I have CD mastering software for the Amiga, I decided to install the drive in my Windows NT 4.0 Pentium system—apart from being faster, it also has 80 Mb of memory which I figured might come in useful for audio track editing.

The software supplied with the drive is Adaptec's EasyCDPro, considered by many to be the best CD mastering software available for the PC. It is fully Windows 95/NT compliant, and can generate CD-ROMs in ISO9660 and CD-DA (digital audio) format. It also supports creating CDs with long filenames, suitable for use under Windows 95 or NT.

Creating a CD couldn't be easier—just click on the "New Project" icon, choose the type of CD to create from the dialog box, then drag and drop files and directories from your hard disk into the EasyCDPro window. By default, files will be stored with the same pathname as on your hard drive, though you can easily change individual files to a different path if you wish.

Once you've finished creating your CD-ROM directory, you can simply hit the Record



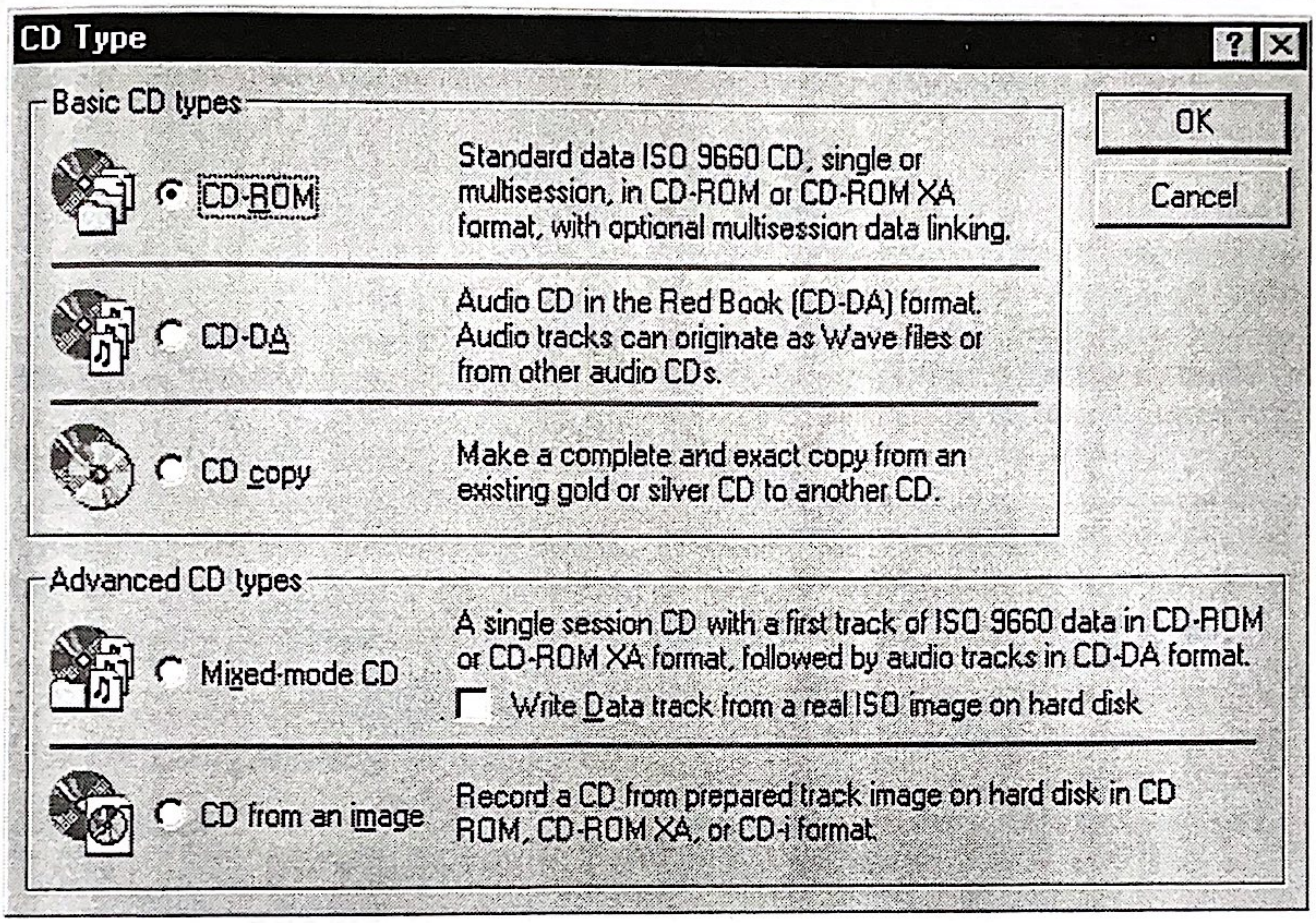
Total size: 47.3MB Total dir.: 32 Total files: 2306

Name	Size	Type	Modified	Destination
E:\ISO9660\NETAPPS	33.3MB	File Folder	11/11/96 01:51:40	\NETAPPS
C:\BIN	4.4MB	File Folder	09/10/96 10:06:38	\BIN
C:\BOOTMENU	79.5KB	File Folder	11/11/96 01:36:52	\BOOTMENU
C:\deckmaster	9.4MB	File Folder	12/17/96 11:28:48	\DECKMASTER
(End of List)				

For Help, press F1

Smart and Friendly CD-R 2004 [0,3,0]

The CD writer comes supplied with Windows software. Amiga CD mastering software is available too


CD Type

Basic CD types

● CD-ROM — Standard data ISO 9660 CD, single or multisession, in CD-ROM or CD-ROM XA format, with optional multisession data linking.

○ CD-DA — Audio CD in the Red Book (CD-DA) format. Audio tracks can originate as Wave files or from other audio CDs.

○ CD copy — Make a complete and exact copy from an existing gold or silver CD to another CD.

Advanced CD types

○ Mixed-mode CD — A single session CD with a first track of ISO 9660 data in CD-ROM or CD-ROM XA format, followed by audio tracks in CD-DA format.

☐ Write Data track from a real ISO image on hard disk

○ CD from an image — Record a CD from prepared track image on hard disk in CD ROM, CD-ROM XA, or CD-i format.

Selecting the CD type is easy with the supplied software. You can even create audio CDs.

button, and off it goes. The first few times you create discs, you may want to use the Test option, which will pretend to write the files to the CD recorder, without actually turning on the laser.

Since you only get one chance to do it right (the recordable discs can only be recorded on once), it's important to ensure that the computer can supply data to the recorder fast enough to keep up. If you are cautious, like me, you can also generate an image file on the hard disk which contains the contents of everything you are writing to the CD-ROM, laid out as a single sequential file. This is a much more efficient way of sending data to the recorder, since the hard drive doesn't have to keep opening and closing lots of small files; however, you will need an extra 600 Mb or so of disk storage available to store the image if you choose this route.

Recording audio CDs is just as easy—you select Audio CD from the initial dialog box, then drag and drop audio files in .WAV format into the window to build your track list. Once you're finished, you hit Record and away you go.

So, how well does it work? The answer is, very well indeed! Since I bought the recorder about two months ago, I've created at least 20 discs with it, both audio and data, and in all that time, I haven't had a single "frisbee"—all the discs have worked perfectly. Recording a disc takes about 1 minute for every 20 Mb of data (or every 2 minutes of music), so recording a full disc rarely takes more than about 30 minutes.

During the recording, you can run other programs, though you probably won't want to do anything too ambitious—after all, if you manage to interrupt the recording process, you can write off your gold disc, along with the £6 it cost to buy it! Happily, the Smart and Friendly recorder includes an internal 1 Mb buffer which helps prevent data loss if the PC gets momentarily distracted.

The recorder also works as a CD reader. Officially, it's a 2x reader which is rather slow by today's standards. However, it seems the version I was sent is actually a 4x reader, which was a nice surprise! So, I can use it to run all my normal CD titles without any problems. The only hiccup was getting the appropriate SCSI drivers sorted out for DOS access; once that was taken care of (thanks to their web site), everything worked perfectly.

Having bought the recorder, of course, I needed something to record on. There is something of a world shortage of recordable discs at the moment—it seems that the cheap recorders have proved a lot more popular than disc manufacturers expected, so there aren't enough blank discs to go around at the moment. As a result, prices have been increasing. I ended up paying about $7.50 a disc (in quantity).

I also bought $50 worth of special CD labels. These are very impressive—on a single A4 laser-printable sheet, you get two round CD labels, pre-punched with a hole in the middle. The kit also comes with a special applicator, which allows you to put the labels onto the CDs perfectly centred. And there are even two narrow horizontal strips for sticking inside the ends of the jewel case, so that you can identify the CD on the shelf. All of this wizardry is sold under the title "Stick It Right!" (I swear I'm not making up these product names!)

So, would I recommend the Smart and Friendly CD recorder? Unreservedly! Although I had heard many scare stories about the hazards and expense of CD recording, in practice everything went without a hitch.

Useful web sites for CD Recording:
CDROM utilities
http://eastwood.apana.org.au/ftp/cdrom6/disc1/cdrom/00_index.htm

Adaptec's Easy-CD Mailing List Archive
http://www.adaptec.com/support/cdrec/ecd_digest.html

The CD Information Center
http://WWW.CD-INFO.COM/

The Voodoo of CD Mastering
http://www.essrl.wustl.edu:80/~adl/mastering/

CD-Recording FAQ
http://www.cd-info.com/CDIC/Technology/CD-R/FAQ.html

Continued from page 7

CUGI's Web site in Trinity College Dublin. The URL should be `http://www3.tcd.ie/~tullyk/CUGI` when operational, for those of you who are interested, but please note that this is only accessible from inside Trinity.

My future plans for CUGI's Web site include putting back issues of the newsletter online, and maintaining a page of links to other useful Amiga sites. Since this is my first HTML project, I'd like to hear from anyone with ideas or suggestions about what other links could be included, and I also welcome constructive criticism on the existing links.

I'd also like to hear from anyone interested in maintaining a page on some aspect of the Amiga, or other Commodore machines, such as the C64. You can contact me by e-mail as `TullyK@tcd.ie`.

Hopefully, these developments herald a bold new era for CUGI and the Amiga. Although I suppose we've heard it many times before, it now seems inevitable that the Amiga will soon be revived in some shape or form.

Third party developers such as Phase 5 seem close to releasing PowerPC based Amigas (see Colin's article elsewhere in this issue), and the improvements made to the Amiga OS and hardware by VISCorp for use in their ED set-top box cannot help but have positive effects on development of stand-alone machines.

Finally, I'd like to ask you all to continue your contact with CUGI, even if you are now the owner of a Wintel system. As one ex-Amigan I know remarked when discussing the state of the Amiga with an interested PC owner, "the Amiga isn't dead – yet – but it is on life support". Don't pull the plug! Please keep visiting the patient – miracles can happen!

The Need for Speed

By Kevin Phair

AFTER some time using the stock 68030 in my A3000, I tired of running CPU-hungry programs with somewhat less than optimum horsepower. After spending some time deciding on whether to go for an '040 or wait for an '060, my decision was made for me with the availability of the Apollo 4060 accelerator board.

Given the ridiculous shortage of CyberStorms, it was unlikely that one of those would be heading my way. With the accelerator board costing about £700 for a 50MHz '060, with an on-board SCSI-2 controller, and an extra £200 for 32MB of RAM, I figured it was worth a go.

Installation

After a month or so of waiting, the Board and RAM finally arrived, and the process of installing it began. After disassembling the A3000, it became apparent that the card didn't really want to sit in neatly, but a bit of garden twine strapping it down firmly onto the CPU slot has since sorted that out.

Because the Apollo is capable of being a boot controller, a jumper lead needs to be installed between the A3000 SCSI controller chip and one of the ROMs, to provide the Apollo with an entry point in the machine's initialisation sequence. This isn't too much of a problem, because the patch consists of two DIL sockets that sit underneath the chips involved, so it's non-permanent and easily done.

One problem that became apparent was that the CPU cooler fan didn't fit, because of the height restrictions within the A3000 desktop model. This was expected however, and the fan now sits sideways behind the card, assisting in the airflow over the motherboard.

This actually seems to be necessary, as some of the custom chips on the motherboard (the names RAMSEY and DMAC have been seen floating about in some circles) seem to be under greater strain with the new processor's demands. A symptom of this seems to be the appearance of spurious checksum errors from the drives attached to A3000's own SCSI bus. The fan blowing over the DMAC seems to help cut those errors down, although I'm sure there are other chips involved.

Speed

As expected, the speed increase was noticeable, with a phenomenal decrease in rendering time with applications such as Imagine and LightWave. In some situations, especially those involving a lot of reflection and refraction, rendering speed seems to have increased tenfold, with some scenes which used to take about an hour and a half to render now only taking about 10 to 15 minutes – quick previews are now just that.

Applications like ADPro, ImageFX and other heavy CPU users also benefit greatly from the new processor.

One problem is that because of difficulties with the CyberGraphX Piccolo driver, I can't enable the instruction allocate section of the instruction cache. This still has not been resolved, contrary to claims made otherwise, although it only affects use when a Piccolo screenmode is in use. Using native graphics modes, as when rendering and modelling, the full speed of the processor can be realised.

SCSI-2

Well, this seems to have been added more as an afterthought by the designers just so they could say their board does it when people ask, "Why should I buy the Apollo over the CyberStorm?" In truth, it's slow, CPU-hungry, and the SCSI tools provided are a bit sloppy in terms of presentation, and somewhat flaky in use. A much better bet is to stick to HD-Toolbox.

One feature of the SCSI tools that come with the board is that it will split a hard drive that is greater than 2GB into a device with more than one LUN, so you can access the extra capacity by addressing more than one logical unit off the same device. How well this works in practice I don't know, because I simply haven't been able to put enough trust into it to be able to say any more.

RAM

The RAM works fine, although because it's installed as two 16MB SIMMS it appears as two memory blocks to the system. I'm told that if I use two 32MB SIMMS it would present one 64MB block though. RAM access speed is much faster, bustest presents a figure of about 40MB/sec reading, and 32MB/sec writing to the on-accelerator RAM – about twice what it was with the '030. This is quite acceptable to me. With the instruction cache allocate enabled RAM access (and general speed) increases by another 25% or so.

Conclusion

In general, I'm fairly happy with the board in terms of the extra speed that I now have available to me. Black marks go to Vision Factory and their reluctance to deal with the CyberGraphX driver problem properly. I'm not happy with the SCSI implementation, but it's there if I absolutely need it in the future.

In terms of value for money though, if I was ordering another one, I'd order one without the SCSI option, and put the difference in price towards a better, purpose-built SCSI-2 controller.

My next option is to try a Piccolo SD64 in place of the standard Piccolo that I have at the moment, to see if I can enable the full features of the CPU, as I know for a fact that the CyberVision 64 driver has absolutely no problems with it. If that works then I'll be very happy with the system as a whole.

CUGI's Library of Reference Manuals

Although most of CUGI's library has been made available for sale, it was felt that certain books contained particularly useful information, and were also hard to obtain. These books have been kept, and are listed below.

A1200 User's Guide Service Supplement
1084S High Resolution Monitor Reference Manual

ICPUG Newsletters

C64 Programmers Reference Guide
C128 Programmers Reference Guide
C64 Service Manual
C128 Service Manual

If you need to look at one of these books, contact the CUGI committee.

For Sale

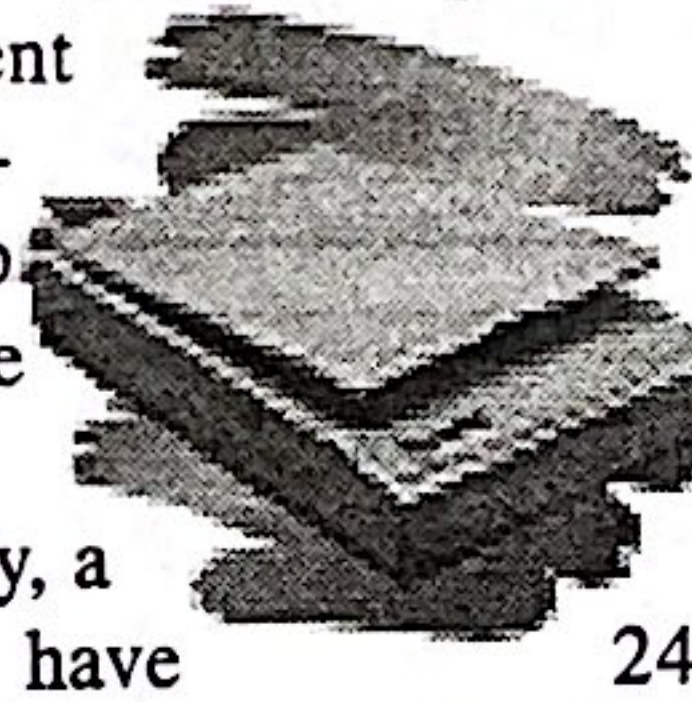
Four 1Mx9 SIMMs (30 pin type). May suit your old memory board! Only £15 the lot. Contact Colin on 284 9549 or 285 7356. Email `csdalton@tcd.ie`.

Microtek E3 Scanner

Gavin McConnon & Karl Jeacle

AS with most prices in the computer world, flatbed scanners have dropped in price in recent times, and it's now possible to buy a new colour scanner for about £300.

Most scanners on the market use the SCSI interface, which works perfectly on Amigas with SCSI interfaces. The problem has always been getting the right driver software to work with the scanner. Products such ImageFX and (the no longer supported) Art Department Professional have allowed Amiga users to hook certain SCSI scanners up to their Amigas, but these tended to be quite expensive models.



Because of the PC boom recently, a number of cheaper flatbed scanners have come on the market which are a little "non-standard" in that they don't work with popular drives made by companies like Epson. And so as usual, Amiga users are left to drool at PC peripheral prices, but not be able to use the equipment as no Amiga drivers are available.

This was the case with the popular Microtek E3 Scanner until shareware Author, Waldemar Zöhner, wrote "ScanTek". This Amiga program costs just US$40 to register, and only requires that your Amiga runs at least Kickstart 2.04 and that you have a SCSI controller of some form.

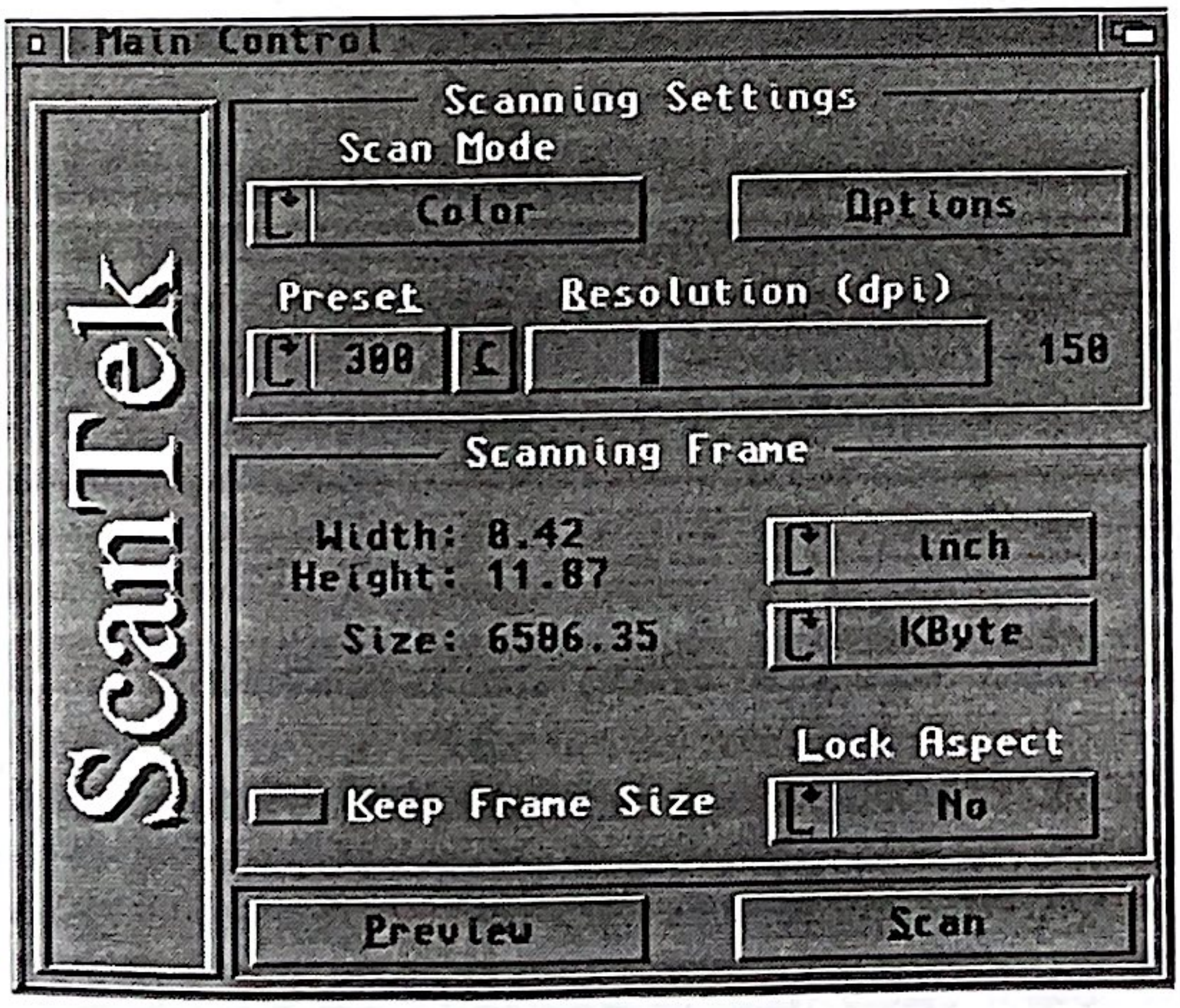
ScanTek provides support for more than just the Microtek E3. It will work wit the following SCSI Microtek scanner models: Microtek IISP, Microtek II, Highscreen Flatbed Color IIs, ScanMaker E3, and ScanMaker 35t. It also supports almost all SCSI Mustek scanner models.

The Hardware

Getting back to the Microtek E3, for the price, its specifications are fairly impressive:

- 300 x 600 dpi optical resolution, 2400 x 2400 dpi with interpolation
- 8.5 x 13.5 in (21.6 x 34.3 cm) scan window
- 24 bit colour, 8 bit grey, or 1 bit black and white scanning
- 25 pin Apple and 50 pin Centronics-style SCSI connectors

Many of the above are standard fare for today's scanners, but the low price, combined with Amiga software support makes the scanner par-



Scan Mode: Color

Preset: 300

Resolution (dpi): 150

Width: 8.42

Height: 11.87

Size: 6586.35

Inch

KByte

Lock Aspect: No

☐ Keep Frame Size

The main scan control window, which provides much of the same functionality as the supplied PC software.

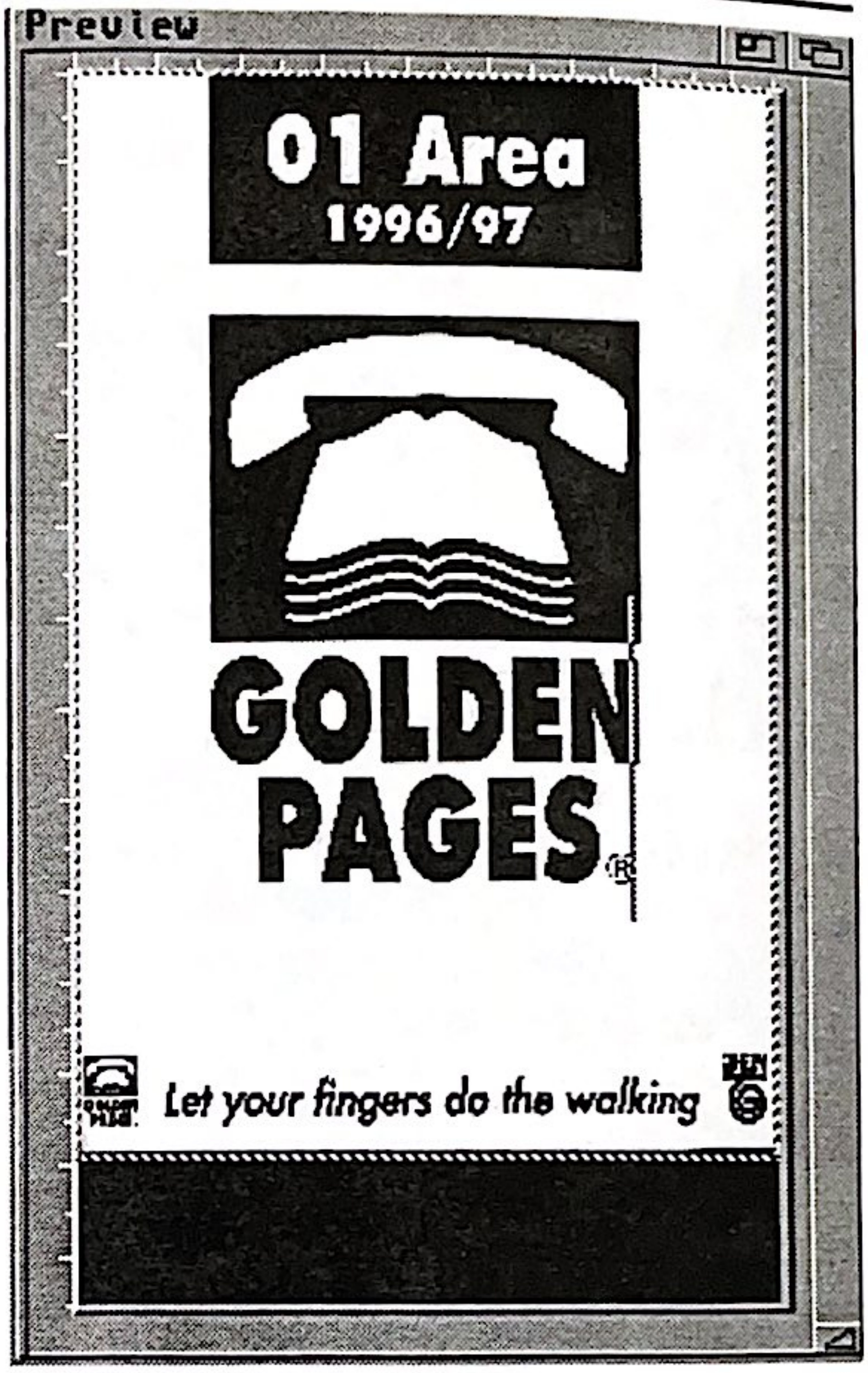
ticularly appealing. The E3's US street price is now only £200!

The Shareware

ScanTek software is a quite a nice piece of software. Sizeable preview windows are available in black/white or grey scale and color previews can be viewed on Cybergraphx screens (15, 16 or 24 bit necessary). ScanTek aims to simply get the image into your Amiga - no more and on less. There are much more skilled programs to view and manipulate the scanned images in color. (A tool like AdPro, ImageFX etc is needed, if you want to do sophisticated post-production). Bear this in mind, if you have no other graphics software!

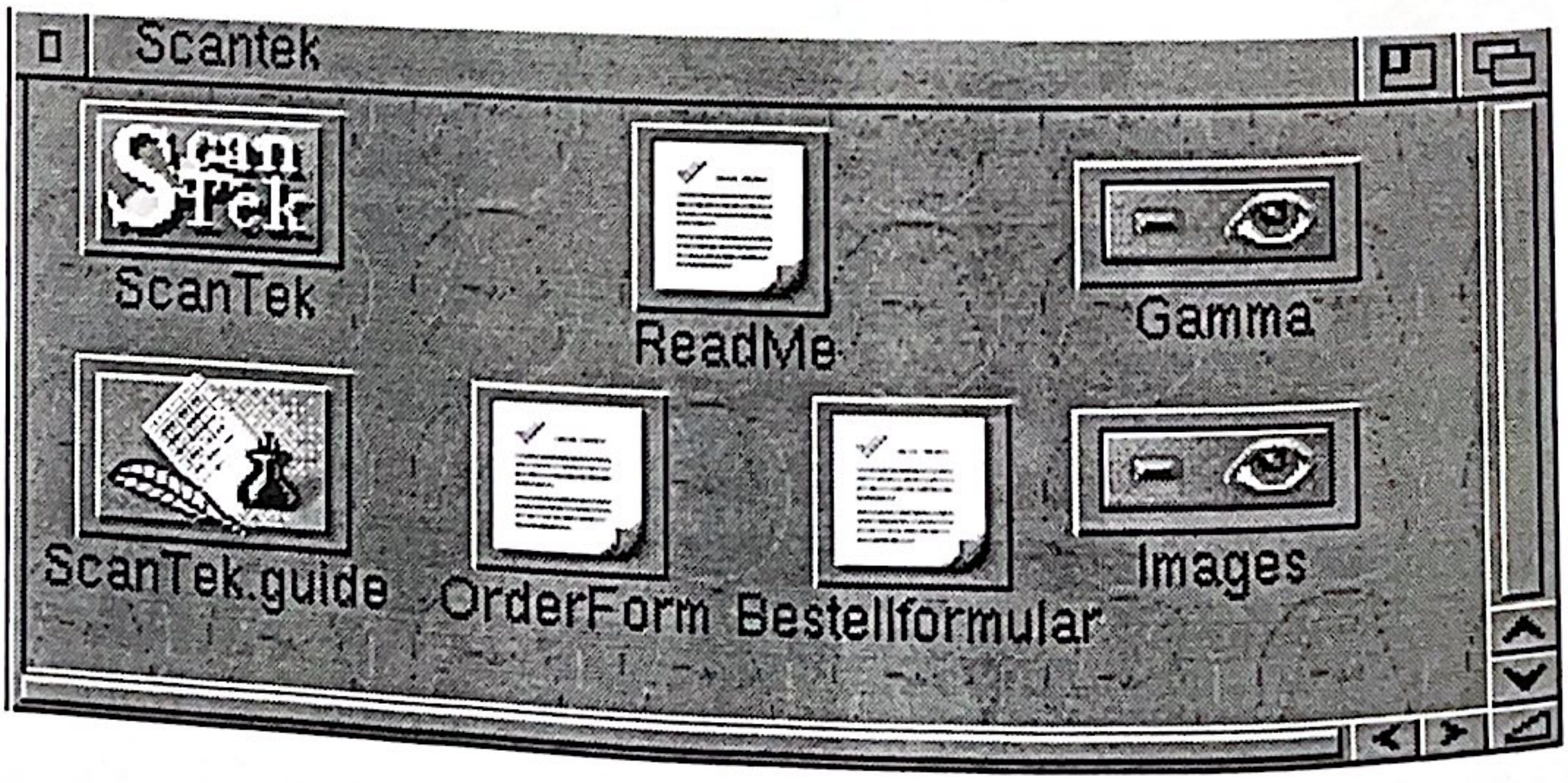
The non registered version of ScanTek is a full working version, but all scanned images have black lines to motivate you to register. Additionally the maximum size of the preview is restricted. While this is obviously a major cripple which avoids you using the software properly (if only for a trial period), it provides you with enough information to know whether or not you want to buy/register the software. To be fair, it's unlikely that you're going to spend three hundred pounds on a piece of hardware and not cough up the forty bucks it costs to register!

The program is reasonably well supported, with bug fixes and updates available on Aminet in the /hard/drivr directory. The current version is called ScanTek2_6.lha. Information on the scanner itself can be found at http://www.mteklab.com/sme3.html. Check it out for yourself...



Above: The preview window. Here, you make a selection to chose the exact area you want to scan. Again, this is almost identical to the PC software provided. We have chosen a particularly interesting subject for this screenshot.

Below: The Scantek shareware is very straightforward and easy to use. At $40 it is also very reasonably priced.



The New Amiga?

By Colin Dalton

AT the end of October, Phase 5 Digital Products (makers of Amiga and Macintosh accelerator boards) announced the specifications of the A\Box, an entirely new, but Amiga-compatible, computer system. They wanted to design something as innovative and "cool" as the original A1000 was 12 years ago. With the ongoing Viscorp/Amiga Technologies saga showing no sign of coming to a satisfactory end, this announcement gave hope to beleagured Amiga users the world over.

Central to the A\Box is a custom chip that is being designed in-house by Phase 5. They specifically chose to go the custom route and eschew the readily-available off-the-shelf chips because they wanted something to stand out from the current crop of PC offerings, and overcome their limitations. The heart of the A\Box is the system controller, Caipirinha. This runs at 200 MHz internally and 100 MHz externally, providing a throughput of 1.6 GB/sec over a 128 bit bus, using SDRAMs (synchronous DRAMs).

Other specifications include:

- 64-bit processor bus with a maximum clock rate of 100 MHz
- two 24-bit video DMA units with freely addressable access, with integrated 24-bit video DAC's
- four 16-bit audio outputs, 44.1 KHz with any number of virtual tracks, sample output, FM and AM synthesis
- video-in ports for 2 independent video inputs in Y/UV 4:2:2 quality
- audio inputs in 16-bit stereo CD quality
- LCD (TFT) controller according to the VESA standard
- a PCI-bus interface for medium-performance I/O applications
- a local 16-bit DMA bus with 66.7 MHz and a maximum band width of 132 M-bytes/second for universal low-cost applications
- an integrated IEEE 1394 firewire controller for digital I/O applications
- a desktop bus interface.

The dual video DMA units allow some interesting applications. The first one is a high performance 220 MHz unit, which allows screens of up to 1600 x 1280 in 24 bit colour at a 75Hz refresh rate. The second is a 135 MHz genlockable signal, which allows for a second monitor output, or the 135 MHz screen can be superimposed as a window on the main output. IO also includes a SCSI 2 interface.

The A\Box will use the Motorola/IBM PowerPC 603e and 604e for its CPU, and up to two processors can be connected, with clock speeds of up to 500 MHz (assuming Motorola ever make a 500 MHz 604!). The Caipirinha chip also provides support for the system's PCI bus, and up to a gigabyte of RAM (installed in pairs of DIMMs).

While Phase 5's web page states a port of AmigaOS 3.1 will be made available, sources in the company indicate that Amiga compatibility is likely to be binary-only, with another OS hosting an Amiga emulator. Exactly which OS will be used has not been decided, but I understand that BeOS has been ruled out, as they feel it hasn't got a long-term future. It is also understood that some form of Unix will be made available, Linux and/or NetBSD.

It is hoped that a base system, consisting of 16 MB RAM, a 150 MHz CPU and a gigabyte hard disk, will cost somewhere in the range of £1,300, and the hardware is expected to be finished towards the end of 1997. Phase 5 claim they are actively setting up a support and distribution network, to be ready by the machine's launch.

So finally there is some hope for Amiga users. Should this machine prove to be more than just a paper tiger, and actually see the light of day, it could be what every Amiga enthusiast has been waiting for.

The thought of a PowerPC-based machine, with such high-end audio and video capabilities, that runs a supported OS, as well as Amiga programs, is very compelling indeed. It may even be enough to win back some former owners who "defected" to Intel machines.

Keep an eye on Phase 5's web site (`http://www.phase5.de`) for further developments.

The Competition

However, Phase 5 have not been the only ones beavering away at PowerPC-based machines. Also with their eye on Amiga owners, past and present, are PIOS – another German company.

They have announced the PIOS ONE, which will run pOS, a proprietory OS, as well as Linux and BeOS. They are planning limited production run for developers, and are accepting orders now. Those with net connections can point their browser at `http://www.pios.de`.

Phase 5 are not too worried by this development. A source within the company cited pOS's lack of any application support as one of the main reasons.

So from a bleak start to the year, the future of non-Wintel machines seems brighter than many would have expected. Those wishing to upgrade, but who can't stand the thought of jumping on the Microsoft bandwagon, will have many choices in 1997, all going well. And if anyone out there buys one of these new machines, we'd sure like to hear about it!

Unsold Auction Items

by Kieran Tully

AT the last CUGI meeting, most of CUGI's assets were sold. However, CUGI still has some items remaining unsold, most of which originally came from the CUGI library collection.

This includes a good selection of technical books pertaining to the Amiga, with works such as the ROM Kernel Reference Manuals (for 1.3 as well as some of those for 2.0), guides to the 68881/68882 FPU, and 'C' programming references. Also of interest to programmers is the User Interface Style Guide , which is the official guide to creating a standard user interface.

There are also some more general books, for example, Amiga Tricks and Tips . If you have one of the older Commodore machines, such as the C64 or C128, you'll find a few books relating to the hardware and programming of those machines.

Should anyone be disappointed and find that 2.0 Libraries RKM they always wanted has been sold, contact Colin, who has a copy as well.

Books

Commodore Reference Manuals

Amiga ROM Kernel, Libraries (2.0/3rd Edition); Amiga ROM Kernel, Includes and AutoDocs (2.0/3rd Edition); Amiga ROM Kernel, Style Guide (2.0/1st Edition); Amiga ROM Kernel (full set of 1.3/2nd Edition volumes); AmigaDOS Manual, 3rd Edition; Enhancer Software (OS 1.3 reference); A2000, A500 Amiga BASIC Manual.

C Programming

Amiga C for Advanced Programmers (Abacus Books), New C Primer Plus (The Waite Group), The C Library (McGraw-Hill), Programming in C, C Quick Reference.

General Interest

AmigaDOS Inside and Out (Revised Edition also), Amiga Disk Drives Inside and Out, Amiga for Beginners, Amiga Intern, Amiga Tricks and Tips, The Amiga System: An Introduction, Compute!'s Beginners Guide to the Amiga, Amiga for Beginners, Kids and the Amiga, Amiga

Applications, Amazing Computing's guide to the Amiga (summer 92), CD-ROM (vol 2) Optical Publishing.

Graphics

Becoming an Amiga Artist, Deluxe Paint II Package – User's Manual & Disk, Amiga World Official AmigaVision Handbook, Inside Amiga graphics, Using Deluxe Paint – 2nd edition.

Programming

Amiga Guide for Advanced Programmers, MC68881/MC68882 Floating-Point Coprocessor User's Manual (Motorola), Amiga Programmer's Handbook, Mapping the Amiga, Microcomputer Puzzles, Commodore 64/128, Advanced C64 Machine Code.

Hardware

Dual ROM Switchers (manual operation – suitable for A500/A600/A1500/A2000).
2400bps Modem.

Videos

The Deluxe Paint IV Video Guide, Amiga Animation Video Volume 2, CU Amiga's Guide to Amiga Video, Space Wars (Tobias Richter).

Purchasing items

If you are interested in buying any of the above items, just contact the CUGI committee, and we can work something reasonable out.

Note that this list may be out of date by the time you receive the newsletter. If possible, please check the web page (http://www.cugi.ie) for the latest information before contacting us.

This isn't goodbye!

Karl Jeacle

RUMOURS of CUGI's demise have been greatly exaggerated. In proof-reading this so-called final newsletter, I'm in the unusual position of being able to write this piece having already read all the other articles including Colin's editorial!

All I seem to read is doom and gloom, and sadness, and farewell. Hold on a second guys! This isn't quite how I see it! I know the AGM wasn't well attended, but you should have paid more attention...

It's true that attendance at meetings was in decline, and that the effort that the committee was putting into the club was going mostly unnoticed by the dwindling membership, but that doesn't mean that CUGI is closing down. It simply means that for the time being, we are changing how the club is run.

At the AGM, it was clear that there wasn't sufficient interest from individuals to serve on the committee in its present form, so a collective decision was taken to ensure the club's continued operation, but in a very different guise. We decided that if four people were willing to join the club and stand on the committee for the 1996/97 year, then as far as the CUGI constitution was concerned, the club could continue. The four names put forward were: Eddy Carroll, Karl Jeacle, Ben Lewis and Kieran Tully.

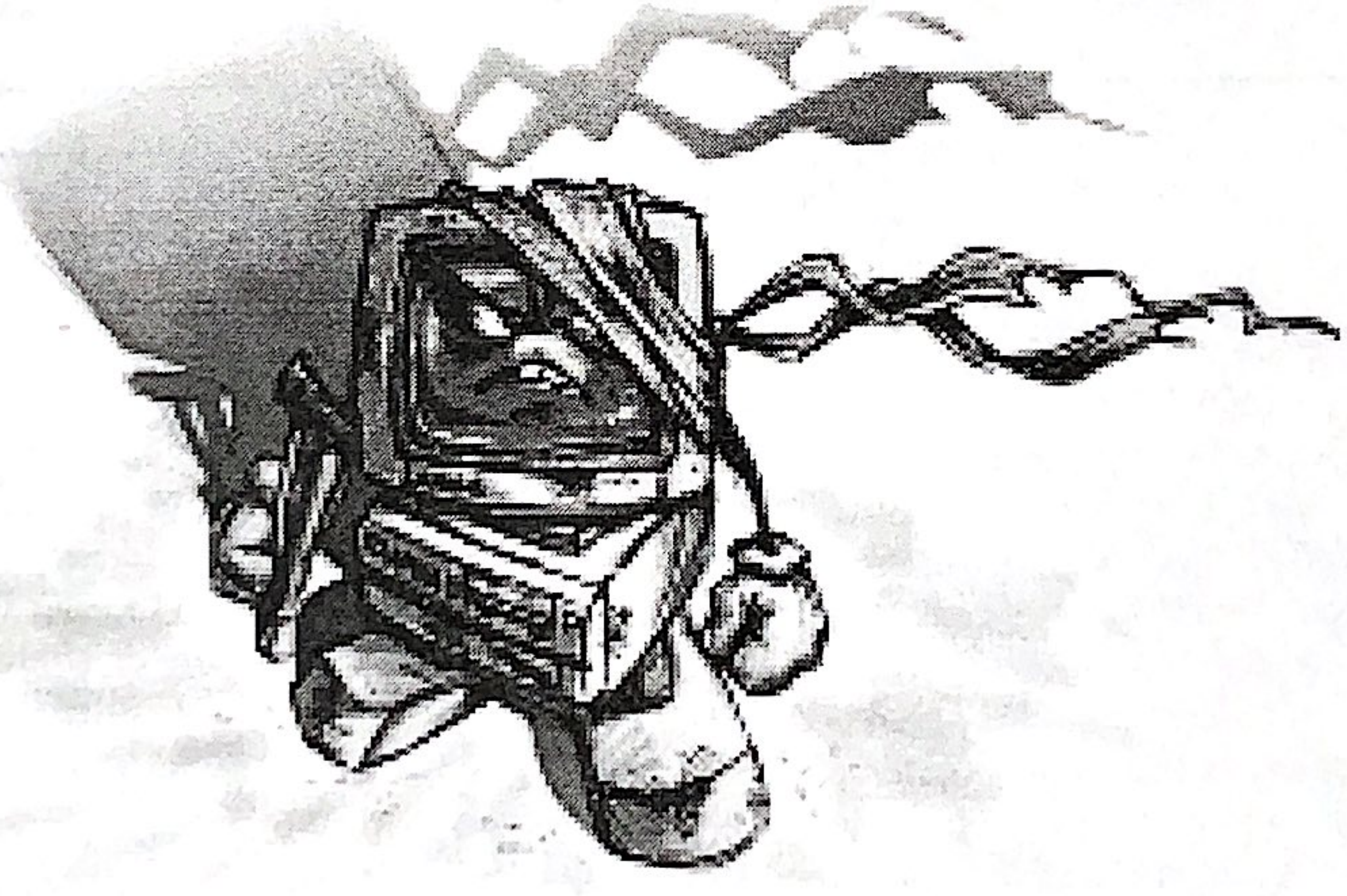
The current state of affairs in the Amiga world is indeed quite different from the days that Colin reminisces about in his editorial. You only have to look at how large the newsletters were back then. The fact that most of our Amigas are still using 1992 technology doesn't help. People will be interested in coming to meetings to see new machines and new peripherals, and seeing what people are doing with all this equipment, but unfortunately, seeing 1992 machines over and over again wears a little thin after a few years. No surprise there.

While many of us are still dedicated Amiga users (what else is there?) and want to keep in touch with each other, there's little point holding physical meetings every month, when not a whole lot has happened in the Amiga world since the previous meeting. So until a time comes when new hardware is released and there is a "buzz" in the Amiga community, CUGI will remain active only in the online world. As Kieran pointed out, the ie-amiga-users mailing list is proving popular, and along with the web site (www.cugi.ie), should be enough to keep everyone in contact until some motivated individual(s) want to organise more meetings and produce another set of newsletters. In addition, St. Andrew's College's facilities are still available to us, for the foreseeable future, at least.

So, in closing this most recent newsletter, I'd like to wish you all many more happy years of Amiga computing, be it with your current system or some fancy new PowerPC machine.

For me, this isn't goodbye from CUGI. We're just taking a break from meetings for a while... big deal, anyone can organise a meeting :-)

See you all on-line!



The Survivor.

AMIGA

This picture, designed on Amigas, of course © Eric Schwartz.
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